



STATE OF MAINE

Office of Information Technology

Disaster Recovery Plan Development

September, 25th 2013



PROJECT OVERVIEW-PHASE I

- Existing State of Maine Disaster Recovery (DR) documentation has been developed in a decentralized process - we leveraged this existing work for this project to contemporize the DR Plan
- Gap analysis complete for Data Center High Availability (HA) Status for Tier 0 (Infrastructure)
- Gap analysis 80% complete for HA Status for Tier 1 (Mission Critical) Applications
- Resource ownership complete for Tier 0 and Tier 1
- Developed an Umbrella DR Plan (DRP)



TIER 0 INFRASTRUCTURE -STATUS

Tier 0 Infrastructure			HA within a DC	HA Across DCs
Data Center	UPS	SSDC	Yes	NA
		CMCC	No	
	Gen-set	SSDC	No	
		CMCC	No	
	Diverse Power	SSDC	No	
		CMCC	No	
	HVAC	SSDC	Yes	
		CMCC	No	
Network	Core LAN	SSDS	Yes	Yes
		CMCC	No	No
	MAN	DOT	No	No
		COB	No	No
	I-Net	CMCC	No	Yes
		COB	No	Yes
	WINS		No	Yes
	DNS/DHCP		Yes	Yes
Storage & Backup		EMC SAN	Yes	No
		EMC NAS	Yes	Yes
		CommVault	Yes	Yes
User Access		AD	Yes	Yes
		LDAP	No	No
Messaging		WAN Access	Yes	Yes
		Exchange	Yes	No
		Voice	Yes	Yes
		VPN Access	No	Yes
		BlackBerry	Yes	No
Radio		LMR	No	Yes



TIER 0 INFRASTRUCTURE -STATUS

<u>Tier Zero</u>	<u>HA Within DC</u>	<u>HA Across DCs</u>	<u>GAP</u>
<ul style="list-style-type: none"> •Data Center •Network •Internet •Storage •Backups •VPN Access •Exchange (12,000 users) •BlackBerry (1,800 users) •Voice (14,000 users) •WAN Access •Radio/LMR 	<ul style="list-style-type: none"> •Yes @ SSDC •Yes @ SSDC •No •Yes •Yes •No •Yes (only at CMCC) •Yes (only at CMCC) •Yes •Yes •No 	<ul style="list-style-type: none"> •No •No •Yes •NAS – Yes, SAN- No •Yes •Yes •No •No •Yes •Yes •Yes 	<ul style="list-style-type: none"> •Partial Gap •CMCC Network Core •Single SAN <p>CMCC is a Tier II Data Center. SSDC is close to a Tier III Data Center.</p>



Data Center Tier Level

Tier Level	Description	Estimated Annual Down Time due to Site	Site Availability
Tier I: Basic	Single path for power and cooling distribution, no redundant components	28.8 hrs	99.671%
Tier II: Some Redundant Components	Single path for power and cooling distribution, redundant components	22 hrs	99.741%
Tier III: Concurrently Maintainable	Multiple power and cooling distribution paths, redundant components, concurrently maintainable	1.6 hrs	99.982%
Tier IV: Fault Tolerant	Multiple active power and cooling distribution paths, redundant components, fault tolerant	0.4 hrs	99.995%



TIER 1 BUSINESS APPLICATIONS - STATUS

TIER 1 APPLICATIONS			HA (Within Data Centers)	HA (Across Data Centers)	NOTES
Agency/Group	Dept.	Application System			
Public Safety	DOC	Corrections Information System (CORIS) (Hosted at Corrections data center)	No	No	SSDC is warm site for rebuild
	DPS	Criminal History Records Information System (CHRIS)	No	No	Planned move to HA Data Center?
		Computer Aided Dispatch (CAD)	TBD	TBD	
		Crash Reporting System (CRS)	Yes	No	
		NetMotion	Yes	No	
	DOT	DOT systems - road repairs (hosted at DOT data center)	TBD	TBD	Need system name
Public Health	DHHS	IMPACT2 - Maine CDC Systems	No	No	Planned move to HA Data Center?
		Child Welfare Case Worker Database	TBD	TBD	Need DB name
	DEP	Environmental Facility Information System (EFIS) and other DEP systems	TBD	TBD	Need name of which DEP app



TIER 1 BUSINESS APPLICATIONS - STATUS

TIER 1 APPLICATIONS			HA (Within Data Centers)	HA (Across Data Centers)	NOTES
Agency/Group	Dept.	Application System			
Financial Services to Citizens	DAFS	Advantage - central accounting system (externally hosted)	TBD	TBD	
	DHHS	Automated Client Eligibility System (ACES) – screening for MaineCare, Food Stamps, etc.	No*	No	*One component of the almost 2 dozen is HA (TBD which one)
		* Medicaid Payments (Molina) (externally hosted)	TBD	TBD	
		DHHS DataHub	TBD	TBD	Planned move to HA Data Center?
		Child Support Enforcement for Maine (CSEME)	Partial	Partial	Many components HA, some not
		Women, Infants & Children (WIC) subsidies	No	No	
	DOL	Unemployment Insurance (UIPROD)	No	No	Needs to be validated
		Benefits - unemployment compensation	Partial	Partial	If this is BUCPROD, the recent UIPROD migration, some but not all components
		DOL Interactive Voice Response (IVR)	Partial	Partial	No for DB
Financial Services to Providers and Internal Financial Management	DAFS	Advantage - central accounting system (externally hosted) - also listed above	TBD	TBD	
	DAFS	Budget and Financial Management System (BFMS)	DB - Yes	DB - Yes	Other components in BFMS – TBD



TIER 1 BUSINESS APPLICATIONS - STATUS

TIER 1 APPLICATIONS			HA (Within Data Centers)	HA (Across Data Centers)	NOTES
Agency/Group	Dept.	Application System			
Revenue Generating	MRS	Maine Revenue Integrated Tax System (MERITS)	Partial	Partial	Needs vetting
		On-line Tax Filing (I-File and E-File)	No	No	Some components are HA
		Tax and Revenue Image Processing System (TRIPS)	No	No	Some components are HA
		MRS Interactive Voice Response (IVR)	Yes	No	
	IF&W	Maine Online Sportsman Enterprise System (MOSES) - hunting and fishing Licenses	No	No	
Regulatory & Other	ACF, IFW, DMR	Natural Resources Agencies - key systems for them	No	No	
	DOE	Infinite Campus (externally hosted)	TBD	TBD	
	DOE	Maine Education Data Management Systems (MEDMS) - financial tracking	No	No	
	PFR	Agency License Management System (ALMS)	No	No	



DR Plan

- DR Teams & Responsibilities
- SoM Data Center Facilities
- Communication Strategy
- Dealing with a disaster
- Disaster Activation, Execution and Reconstruction Phases
- DR Plan, Testing & Maintenance
- Key personnel & Vendor Contact Information



Introduction

- Definition of a disaster
- Purpose of DRP
- Assumptions

Communicating During a Disaster

- Comm. with Employees
- Comm. with Vendors

DR Teams & Responsibilities

- Emergency Response Team
- Recovery Executive Management Team
- Disaster Recovery Team
- Expert Team Members
- Roles & Responsibilities

Dealing with a Disaster/Activation Phase

- Disaster Identification
- Disaster Severity Assessment
- Disaster Impact & Damage Assessment
- Disaster Declaration procedures

Disaster Recovery Call Tree

- Disaster Recovery Call Tree
- Key Personnel Contact Information
- Vendor Contact List

Disaster Execution & Reconstruction Phases

- Tier 0 Validation Checklist
- Tape Recovery
- Data Storage & Backup procedures
- Tier 1 apps restore priorities
- Application Run-book Template

SoM Recovery Facilities (RF)

- Description of Facilities
- Operational Considerations

Plan Testing and Maintenance

- DRP Maintenance
- DRP Change Log
- DR Testing Schedule
- DRP documentation & Storage



DR APP RUNBOOK (DOL TEMPLATE)

- Applications business owners, Application/Development & Technology Business Consultant (TBC) staff
- Servers, OS, DB, network, storage recovery
- Recovery Point & Recovery Time Objectives
- Application dependencies, versioning, licensing
- Backup processes & schedules
- Post incident review/resolution tracking



Recommendations

1. Hire a Full-Time DR Manager

2. Short Term:

Migrate CMCC Tier 1 applications to SSDC

3. Long Term:

Develop a comprehensive Data Center Strategy encompassing Co-Location, Cloud, Outsourcing & DR, with a High Availability and an environment resiliency architecture strategy



Recommendations – In Parallel

- To implement #2 above; identify location of Tier 1 applications; SSDC or CMCC?
- Prioritize and remediate non-HA gaps
- Discussion of Tier 1 Run-Books strategy moving forward
- Include DR Cost options as part of annual IT Budget
- Plan for Yearly DR Test Tier 1 Applications
- Plan for Yearly component and integrated Tier 0 infrastructure testing
- Encourage ownership of DR by Agencies/OIT/AppDev/TBCs

